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EXAMINER	
PEACE, RHONDA S	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No. 10/759,511	Applicant(s) BRUESSELBACH ET AL.	
	Examiner Rhonda S. Peace	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17 and 19-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17 and 19-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Russell et al (US Patent 4932747).

As to claim 1, Russell et al teaches a plurality of optical fibers **15** (column 3 lines 63-67, Figure 3), each having a first **15b** and second **15a** end, whereby the fibers are bundled, fused, and tapered proximate the first end **15b**, and providing a facet normal to the length of the fibers, formed by means of cutting, polishing, or any similar method (column 4 lines 67-68 and column 5 lines 1-3, column 5 lines 8-16, Figure 3), and wherein the second end **15a** of the fibers are detached from each other (column 4 lines 46-51, Figure 3).

With regards to the process limitations in claim 1 reciting that the facet is "formed by cleaving or cut (cutting) and polishing said tapered region in a direction perpendicular to the fiber axis" are not given patentable weight, as the method of forming a device is not germane to the issue of patentability of the device itself. An apparatus must be distinguished from the prior art in terms of structure, rather than the method by which the apparatus is formed. Therefore, in the case of claim 1, prior art which shows a facet

which is perpendicular to the fiber axis is sufficiently shows such a structure is anticipated by the prior art.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 20, 23, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harootian (US Patent 5303373).

Addressing claim 20, Harootian discloses a plurality of optical fibers, each having a first and second end, whereby the fibers are bundled, fused, and tapered along their length, and providing a facet normal to the length of the fibers (column 2 lines 27-37), formed by means of cutting, polishing, or any similar method. (column 5 lines 41-43). Harootian discloses the fibers used within the bundle are chosen to meet the requirements desired, and therefore would include the use of single mode optical fibers (column 4 lines 4-8). One of ordinary skill in the art would be motivated to use such fibers when it is desired to transmit signals in a single mode only. Also, Harootian teaches the claimed device of where all individual optical fibers fit precisely from one side of the corresponding imaging device to the other side of the bundle (column 3 lines 3-11, 28-33). As well, Harootian shows the device, wherein the diameter of the optical input at the fused end of the given optical fiber is smaller than the diameter of the same optical input at the unfused end of the given optical fiber (column 3 lines 34-43; column 2 lines 22-26). In addition, Harootian explains this device is designed to couple two imaging devices, the nature of which is uncritical (column 4 lines 17-24; figure 1). This being said, either end of the device as described by Harootian may be considered an optical input, and therefore, one can also say that the diameter of the optical input proximate the fused end of the given optical fiber (as the entire bundle is fused) is larger than the diameter of the same optical input at the opposite end of the given optical fiber (column 3 lines 34-43; column 2 lines 22-26). As the nature of the devices coupled by

Harootian is uncritical, and either end can serve as the optical input, it would have been obvious to one of ordinary skill in the art to allow the facet to receive an optical input, as this allows for the multiplication of signals, as each output (unfused fiber ends) will output the signal introduced to the fused end.

As to claim 23, Harootian shows the device of claim 20 wherein the core diameter of each optical fiber in the tapered region is smaller than the core diameter of each optical fiber in the non-tapered region (column 2 lines 27-37).

As to claim 26, Harootian teaches the device of claim 20 wherein at least one optical fiber has a different core size from at least one other optical fiber (column 4 lines 8-16).

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harootian (US Patent 5303373) and in further view of Basavanhally et al (US Patent 6827500).

Pertaining to claim 21, Harootian describes the device as discussed above. Harootian, however, does not disclose the use of array chosen from the group pf hexagonal arrays, square arrays, and three-nearest neighbor arrays. Basavanhally et al teaches a plurality of optical fibers that are arranged in a hexagonal close packed array (figure 1; column 2 lines 11-15). The use of the teachings of Basavanhally et al with the device described above by Harootian would have been obvious to a person of ordinary skill in the art, as the hexagonal array described by Basavanhally et al minimizes unused space within the optical fiber bundle.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harootian (US Patent 5303373) and further in view of Smith et al (US Patent 5045100).

As to claim 22, Harootian describes the device as discussed above. However, Harootian does not disclose the use of a glass matrix to contain the fibers. Smith et al discloses the use of a glass matrix for arrangement of optical fibers within a bundle (column 2 lines 51-55; column 1 lines 35-51). To one of ordinary skill in the art, it would have been obvious to couple the teachings of Harootian and Smith et al, for the purpose of uniformity. The use of a glass matrix is beneficial as it provides material continuity between all elements of the optical fiber bundle, ensuring the optical fibers will behave in an appropriate manner. Using dissimilar materials in the construction of the fiber bundle increase the possibility of structural instability and behavior malfunction during the fusing, tapering, and stretching process. Since glass is a common material in fiber construction, it would have been obvious to one skilled in the art to use glass as the material for matrix construction for the reason stated.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harootian (US Patent 5,303,373) in view of Smith et al (US Patent 5,045,100) and further in view of Anthon et al (US Patent 6,411,762).

Speaking to claim 24, Harootian and Smith et al describe the device as discussed above. However, neither Harootian nor Smith et al discuss the use of fluorosilicate in the glass matrix designed to restrain fibers. Anthon et al discloses the

use of a fluorosilicate glass matrix in the formation of optical fiber bundles (column 13 lines 1-16; figure A). Fluorosilicate offers a low refractive index doping agent, minimizing any light that may be passed from one optical fiber within the bundle to another. For this reason, it would have been obvious to one skilled in the art to use fluorosilicate as the specific glass matrix material.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harootian (US 5303373) in further view of Au-Yeung et al (US 6134362).

As to claim 25, Harootian shows said device where the fibers comprising the fused section are uniformly stretched (column 2 lines 38-56; column 6 lines 50-58). However, Harootian does not disclose the method of uniformly stretching the bundle of fibers to obtain the desired amount of optical coupling between the cores of the fibers within the bundle. Au-Yeung et al discloses it is well known that various amounts of stretching during the fusing process lead to various amounts of coupling between the cores of the fibers within the bundle (column 1 lines 21-32, column 3 lines 50-52, Figure 3B). It would have been obvious to one of ordinary skill in the art to combine the teachings of Harootian and Au-Yeung et al, as it would allow the device of Harootian to be modified to achieve the desired amount of coupling by uniformly stretching the fused portion of the bundle by an amount denoted by Au-Yeung et al, thereby allowing for greater specialization of the bundle, and more accurate formation of the bundle's coupling ratio (column 2 lines 6-16).

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Russell et al (US 4932747) in further view of Jain et al (US 6515257).

As to claim 27, Russell et al teaches a plurality of optical fibers **15** (column 3 lines 63-67, Figure 3), each having a first **15b** and second **15a** end, whereby the fibers are bundled, fused, and tapered proximate the first end **15b**, and providing a facet normal to the length of the fibers, formed by means of cutting, polishing, or any similar method (column 4 lines 67-68 and column 5 lines 1-3, column 5 lines 8-16, Figure 3). UV grade fibers may be used as the fibers within the bundle (column 4 lines 6-18). While Russell does not disclose these UV grade fibers as single mode fibers, it is well known in the art that such fibers can serve as single mode fibers. Jain et al discloses the use of UV grade optical fibers that are single mode fibers (9:21-24). It would have been obvious to one of ordinary skill to combine the teachings of Russell et al and Jain et al, thereby using single mode optical fibers in the device of Russell et al, as the use these fibers allow the device to be applicable to areas where it is desirable to transmit only a single mode.

Claims 4, 5, 9-11, 14, 19 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Russell et al (US 4932747) in further view of Au-Yeung et al (US 6134362).

As to claims 9 and 11, Russell et al teaches a method of coupling light using a plurality of optical fibers **15**, each having a first **15b** and second **15a** end (column 5 lines 19-30, Figures 3 and 4), wherein the fibers are fused together proximate the first end

15b and tapered such that the core fiber diameters at the tapered end **15b** of the bundle are smaller than core fiber diameters at the untapered **15a** end of the bundle (column 5 lines 30-36, Figures 3 and 4). In addition, Russell et al shows a facet formed by cleaving the fiber in any desired manner (column 5 lines 34-42, Figures 3 and 4), as well as illuminating the facet with light (column 5 lines 22-26). In addition, the second ends **15a** of the fibers **15** are left detached, or independent, from one another during the fusing process (column 4 lines 46-51, Figure 3). However, Russell et al does not disclose the method of uniformly stretching the bundle of fibers to obtain the desired amount of optical coupling between the cores of the fibers within the bundle. Au-Yeung et al discloses it is well known that various amounts of stretching during the fusing process lead to various amounts of coupling between the cores of the fibers within the bundle (column 1 lines 21-32, column 3 lines 50-52, Figure 3B). It would have been obvious to one of ordinary skill in the art to combine the teachings of Russell et al and Au-Yeung et al, as it would allow the design process of Russell et al to be modified to achieve the desired amount of coupling by uniformly stretching the fused portion of the bundle by an amount denoted by Au-Yeung et al, thereby allowing for greater specialization of the bundle, and more accurate formation of the bundle's coupling ratio (column 2 lines 6-16).

As to claims 28-30, Russell et al teaches a plurality of optical fibers **15** (column 3 lines 63-67, Figure 3), each having a first **15b** and second **15a** end, whereby the fibers are bundled, fused, and tapered proximate the first end **15b**, and providing a facet normal to the length of the fibers, formed by means of cutting, polishing, or any similar

method (column 4 lines 67-68 and column 5 lines 1-3, column 5 lines 8-16, Figure 3). However, while Russell et al discloses the bundle is stretched during the tapering process, it is not disclosed that this stretching will lead to a desired amount of coupling between the cores of the respective fibers within the bundle. Au-Yeung et al discloses a tapered fiber bundle that is fused and acts as a coupler (Figure 8, column 2 lines 19-54). Au-Yeung et al discloses it is well known that various amounts of stretching during the fusing process lead to various amounts of coupling between the cores of the fibers within the bundle (column 1 lines 21-32, column 3 lines 50-52, Figure 3B). It would have been obvious to one of ordinary skill in the art to combine the teachings of Russell et al and Au-Yeung et al, as it would allow the design process of Russell et al to be modified to achieve the desired amount of coupling by stretching the fused portion of the bundle by an amount denoted by Au-Yeung et al, thereby allowing for greater specialization of the bundle, and more accurate formation of the bundle's coupling ratio (column 2 lines 6-16).

As to claims 4, 5, 10, 14, and 19, Russell et al and Au-Yeung et al disclose the device as described above. Furthermore, Figure 3 of Russell et al clearly illustrates the core diameter of each optical fiber in the tapered region **15b** is smaller than the core diameter of each optical fiber in the non-tapered region **15a**. Russell et al also teaches each optical fiber **15** is adapted to receive input signals adjacent the second end **15'** and emit the signals as a combined output at the facet adjacent the second end of the fiber **15"** (column 7 lines 12-17, Figure 5). Moreover, Russell et al teaches at least one

optical fiber has a different core size from at least one other optical fiber (column 4 lines 21-25).

Claims 2 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Russell et al (US Patent 4932747) in further view of Au-Yeung et al (US 6134362), and further in view of Basavanhally et al (US Patent 6827500).

Pertaining to claims 2 and 13, Russell et al and Au-Yeung et al teach the device and method as described above. While Russell et al suggests using any desired array shape (column 2 lines 43-51), it is not directly suggested (nor in Au-Yeung et al) that hexagonal, square, and three-nearest neighbor packed arrays can be used. Basavanhally et al teaches a plurality of optical fibers that are arranged in a hexagonal close packed array (figure 1; column 2 lines 11-15). The use of the teachings of Basavanhally et al with the device described above by Russell et al would have been obvious to a person of ordinary skill in the art, as the hexagonal array described by Basavanhally et al minimizes unused space within the optical fiber bundle. While it is observed Russell et al describes the fiber bundle as being closely packed in any desired array, this does not exclude the application of the teachings of Basavanhally et al to the device of Russell et al. Certainly the overall teaching supplied by Basavanhally et al shows the formation of arrays showing a hexagonal shape, and while the actual scaled device of Russell et al may not couple directly with the actual scaled array of Basavanhally et al, the teachings remain applicable, namely because they show that it is possible to use arrays of various geometries for optical fiber bundles.

Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Russell et al (US Patent 4932747) in further view of Au-Yeung et al (US 6134362), and in further view of Smith et al (US 5045100).

Regarding claims 3 and 12, Russell et al and Au-Yeung et al teach the device and method as described above. In addition, Russell et al discloses the use of an optical array of a predetermined format (column 2 lines 45-51). However, Russell et al and Au-Yeung et al do not disclose the specific use of a glass matrix to contain the optical fibers of the device. Smith et al discloses the use of a glass matrix for arrangement of optical fibers within a bundle (column 2 lines 51-55; column 1 lines 35-51). To one of ordinary skill in the art, it would have been obvious to couple the teachings of Russell et al and Smith et al, for the purpose of uniformity. The use of a glass matrix is beneficial as it provides material continuity between all elements of the optical fiber bundle, ensuring the optical fibers will behave in an appropriate manner. Using dissimilar materials in the construction of the fiber bundle increase the possibility of structural instability and behavior malfunction during the fusing, tapering, and stretching process. Since glass is a common material in fiber construction, it would be obvious to one skilled in the art to use glass as the material for matrix construction for the reason stated.

Claims 7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Russell et al (US Patent 4932747) in further view of Au-Yeung et al (US 6134362), in view of Smith et al (US 5045100) and further in view of Anthon et al (US 6411762).

Speaking to claims 7 and 16, Russell et al discloses the device and method, as further viewed by Au-Yeung et al and Smith et al, as discussed above. Neither Russell et al, nor Au-Yeung et al, nor Smith et al discloses the use of a glass matrix comprised of fluorosilicate. Anthon et al discloses the use of a fluorosilicate glass matrix in the formation of optical fiber bundles (column 13 lines 1-16; Figure A). Fluorosilicate offers a low refractive index doping agent, minimizing any light that may be passed from one optical fiber within the bundle to another. For this reason, it would have been obvious to one skilled in the art to use fluorosilicate as the specific glass matrix material.

Claims 6, 8, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Russell et al (US Patent 4932747) in further view of Au-Yeung et al (US 6134362), and in further view of Harootian (US 5303373).

As to claims 6, 8, 15 and 17, Russell et al and Au-Yeung et al disclose the device and method as described above. Furthermore, Russell et al discloses the diameter of the optical input at the unfused end **15a** of the given optical fiber is larger than the diameter of the same optical input at the fused end **15b** of the given optical fiber, due to the tapering process. Also note that Russell et al specifically states that the device may be fashioned into a number of sizes and shapes, and would include the arrangement where the optical input at the unfused end of the given optical fiber is larger than the

diameter of the same optical input at the fused end of the given optical fiber (column 5 lines 8-16, Figure 3). However, Russell et al and Au-Yeung et al do not disclose multi-directional qualities of the device, meaning that it is able to receive an input at the facet and be emitted as a plurality of signals from the unfused ends of the fibers. Harootian shows a multiple fiber bundle which is tapered along its length and cleaved proximate the fused end, where the ends are coupled to two imaging devices, the nature of which is uncritical (column 4 lines 17-24; figure 1). Therefore it is possible that an input is delivered to the facet of the fused portion of the bundle and distributed to each optical fiber within the bundle. It would have been obvious to one of ordinary skill in the art to combine the teachings of Harootian and Russell et al to extract the teaching that tapered optical fiber bundles may be adapted to allow the facet to accept input signals and thereby adapt the opposite, untapered end to act as an output for optical signals.

Response to Arguments

Applicant's arguments filed 12/8/2005 have been fully considered but they are not persuasive with respect to the 35 U.S.C. §102(b) rejection of claim 1 under Russell et al, or the 35 U.S.C. §103(a) rejections of claims 20-24 and 26 under Harootian (claims 20, 23, and 26), Harootian in view of Basavanhally et al (claim 21), Harootian in view of Smith et al (claim 22), or Harootian in view of Smith et al and in further view of Anthon et al (claim 24).

With respect to claim 1, the Applicant has argued that Russell et al does not disclose the limitations of claim 1, as Russell et al describes the ends **15a** of the fibers

to be "closely packed" (column 3 lines 67-68, column 4 lines 1-3 and 60-66). While the examiner agrees with this observation, Russell et al, while describing the fiber ends as closely packed, also describes them as "individual fibers," thereby indicating that they are not fused and therefore must be detachable from one another (column 4 lines 46-51). Notice also that within Figure 5, Russell et al shows that groups of these fiber ends have been detached from one another. With this collective evidence, Russell et al shows that fiber ends may be closely packed, and yet still detachable from one another. Also, at this time the examiner would like to note that the Applicant has placed no further limitation (such as separation distance, etc) upon these fiber ends except that they be "detachable from one another." The fiber ends meet this requirement as they are separate fiber ends, and therefore separable, as opposed to fused fibers.

Pertaining to claims 20-24 and 26, the Applicant has amended claim 20 to include the limitation that the fibers within the plurality are single mode optical fibers. As Harootian places no limitations upon the kinds of fibers that may be used within their device (column 4 lines 4-8), one may draw the conclusion that all fibers would be suitable for such a device, including single mode fibers. The Applicant has also argued that claims 21-24 and 26 are not disclosed in the prior art, as Harootian fails to disclose the use of single mode optical fibers. As Harootian's inclusion of single mode fibers has been shown, the applicant's assertion that claims 21-24 and 26 are not disclosed in the prior art is respectfully overcome.

Applicant's arguments with respect to claims 2-17, 19, and 27-30 have been considered but are moot in view of the new ground(s) of rejection discussed in detail in the preceding section.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fidric et al (US 6434302) discloses optical couplers for multimode fibers. Rolston (US 2003/0123801) discloses all-fiber dynamic optical wavelength switch/filter device. Corio et al (US 6862386) discloses the method of making a Mach-Zehnder interferometer and related devices. Carberry et al (US 5881189) discloses a method and apparatus for micropositioning optical fibers. Gonthier et al (US 2003/0031415) discloses a polarization-combining fused fiber optical coupler and method of producing the same. Antos et al (US 2005/0163443) discloses an optical fiber and perform, method of manufacturing the same, and optical components made therefrom.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda S. Peace whose telephone number is (571) 272-8580. The examiner can normally be reached on M-F (8-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272- 2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rhonda S. Peace
Rhonda S. Peace
Examiner
Art Unit 2874

Michelle R. Connelly-Cushwa
MICHELLE CONNELLY-CUSHWA
PRIMARY EXAMINER
1/6/06